Status Summary 2022:
Road Safety Risk Factors

Bloomberg Philanthropies Initiative for Global Road Safety

DHAKA NORTH, BANGLADESH

JOHNS HOPKINS
BLOOMBERG SCHOOL
of PUBLIC HEALTH

**International
Injury Research Unit**

Beginning in 2021, the Johns Hopkins International Injury Research Unit through the Bloomberg Philanthropies Initiative for Global Road Safety conducted observations in Dhaka North to reduce road injuries and fatalities.

The following report highlights results from an ongoing study that captured observations of three risk factors: speed, helmet use, and seat–belt and child restraint use.* The baseline round captured all three risk factors, while two additional rounds of speed observations was conducted between April 2022 and November 2022.

*This study did not observe drink driving due to COVID–19 risks.

Of all observed vehicles in Dhaka North,*

10%

exceeded the posted speed limit.

Correct helmet use among passengers was low at

47%

Seat-belt use among all vehicle occupants was low

43%

Seat–belt use by passengers was rare (5%).

Child restraint use was non–existent at

0%

Note: Although congestion is a big issue in Dhaka North, this study observed speeding on roads and sites where vehicle speed was not impeded by congestion or other factors. This allowed for the measurement and monitoring of risk.

Road Traffic Fatalities in Dhaka

2021

21.7 million
total population in Dhaka

456
fatalities*
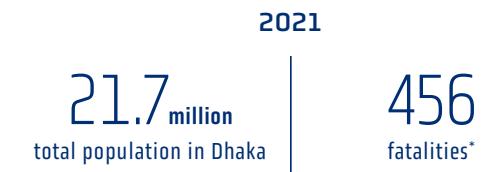
Vulnerable road users (pedestrians, motorcyclists, and bicyclists) **accounted for 83% of reported road traffic fatalities** in 2021.

Deaths by road user type, 2021

- 43% Pedestrians
- 23% Cyclists
- 17% Vehicle Occupants
- 17% Motorcyclists
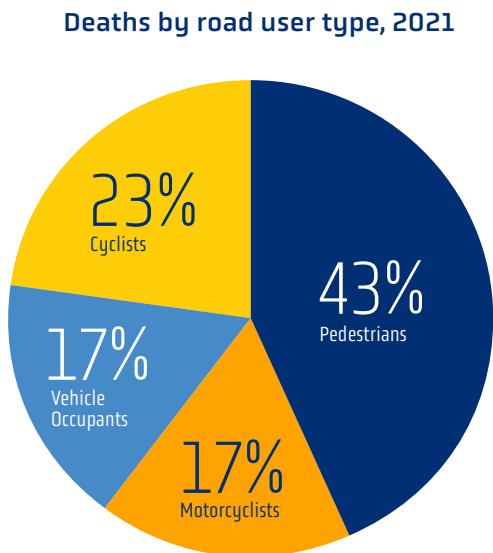
Enhanced enforcement could reduce deaths among vulnerable road users, which account for 83% of road traffic fatalities.

*Note: Data from existing sources was used for the outcome data indicators. Police crash data systems are prone to underreporting.

Recommendations

Dhaka Metropolitan Police:

- Enhance enforcement of:
  - correct helmet use among all motorcyclists, especially passengers with a focus on proper strapping.
  - seat-belt use for all occupants, especially passengers.
- Implement targeted speed enforcement with a focus on high-risk groups, such as trucks, minibuses/minivans, three-wheelers, pickup/light trucks, buses, and commercial vehicles.
- Implement sustained, visible, and widespread enforcement operations across the city for maximal impact.

Dhaka North City Corporation and Bangladesh Road Transport Authority:

- Implement hard-hitting mass media campaigns to increase awareness of speed as a major risk factor for road traffic injuries. Messages ought to focus on high-risk roads, times, and user groups.
- Coordinate mass media campaigns with enhanced enforcement initiatives.
- Ensure speed limits are designated in line with the functional classification of roads and global best practices.
- Implement speed-calming measures particularly on roads and in areas where vulnerable road users (pedestrians, motorcyclists, and cyclists) interact with vehicles.
- Advocate for a national child restraint law in line with global best practices.

Speed in Dhaka North

Higher speeds lead to a greater risk of a crash and a higher probability of serious injury. An increase of 1 km/h in average vehicle speed results in an increase of 3% in the incidence of crashes resulting in injury and an increase of 4%–5% in the incidence of fatal crashes.[*]

*Save LIVES: A road safety technical package. Geneva: World Health Organization; 2017.

Of all observed vehicles, 10% exceeded the posted speed limit.

The global recommendation is 30 km/h for local and collector roads. Applying the global recommendation (30km/h), 47% of observed vehicles were speeding on local and collector roads.

Speeding was highest among trucks (80%), minibuses/minivans (33%), three-wheelers (23%), and pickup/light trucks (22%), and buses (18%) in November 2022.

During the early morning hours (between 4:30 – 6:00 am), 49% of the observed vehicles were traveling above the posted speed limit.

Functional classification of roads

Arterial road: These are roadways with high traffic volume; they provide a high degree of mobility and carry a high proportion of travel for long distance trips. These roadways carry the major portion of trips entering and leaving an activity center, as well as the majority of movements that either go directly through or bypass the area.

Local road: These roads provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas.

Collector road: These roads collect traffic from local roads and connect to arterial roadways. They penetrate neighborhoods and communities, collecting and distributing traffic between neighborhoods and arterial roads. Collector roads are shorter than arterial but longer than local roads.

These roads provide less mobility than arterials at lower speeds and for shorter distances.

Key Findings on Speed in Dhaka North

Speed enforcement is needed on all road types

Chart: Percentage of vehicles observed speeding by road type

Road type	Aug 2021	Apr 2022	Nov 2022
Overall	13%	11%	10%
Arterial	15%	17%	12%
Collector and local	15%	13%	7%
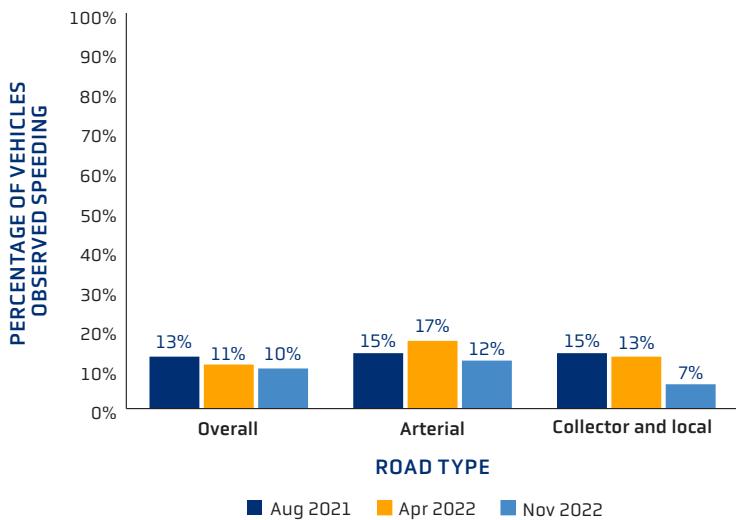
Speeding was more frequent among trucks, minibuses, three-wheelers, pickups, and buses

Chart: Percentage of vehicles observed speeding by vehicle type

Vehicle Type	Percentage
Trucks	80%
Minibuses/Minivans	33%
Three-Wheelers	23%
Pickup/Light Trucks	22%
Buses	18%
Sedans/Saloons/SUVs/4WDs	3%
Motorcycles	3%
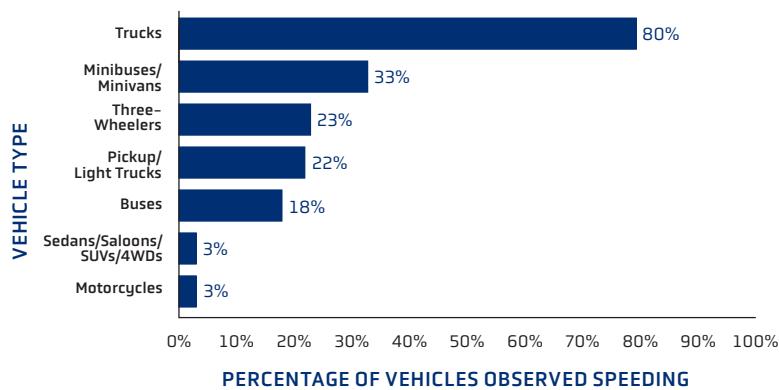
Recommendations

Dhaka Metropolitan Police:

- Implement targeted speed enforcement with a focus on high-risk vehicles such as trucks, minibuses/minivans, three-wheelers, pickup/light trucks, buses, and commercial vehicles.

- Coordinate enforcement activities with mass media campaigns.

Dhaka North City Corporation and Bangladesh Road Transport Authority:

- Implement hard-hitting mass media campaigns to increase awareness of speed as a major risk factor for road traffic injuries. Messages ought to focus on high-risk roads, times, and user groups.

- Ensure speed limits are designated according to the functional classification of roads and global best practices.

- Implement speed-calming measures particularly on roads and in areas where vulnerable road users (pedestrians, motorcyclists, and cyclists) interact with vehicles.

Helmet Use* in Dhaka North

Using a motorcycle helmet correctly** can reduce the risk of fatality by 42% and the risk of serious head injury by 69% in the case of a crash.

*Overall helmet use was defined as strapped or unstrapped use of a helmet of any type.
**Correct helmet use was defined as the use of a standard helmet that was worn correctly and with the chin strap fastened.

While overall helmet use was high (92%), **correct helmet use was 87% among drivers and just 47% among passengers.**

Correct helmet use was lower on local and collector roads (72%) compared with arterial roads (84%).

Correct helmet use was lower on weekends (75%, Friday and Saturday) compared with weekdays (80%, Sunday to Thursday).

Children (under 18 years of age) were less likely to use a helmet (31%) compared with adults (79%).

Key Findings on Helmet Use in Dhaka North

Despite high overall helmet use, correct helmet use by passengers was low

Bar chart — PERCENTAGE OF OBSERVED HELMET USE:
- All Occupants: Overall helmet use 92%, Correct helmet use 78%
- Drivers: Overall helmet use 95%, Correct helmet use 87%
- Passengers: Overall helmet use 83%, Correct helmet use 47%

Legend: ■ Overall helmet use ■ Correct helmet use
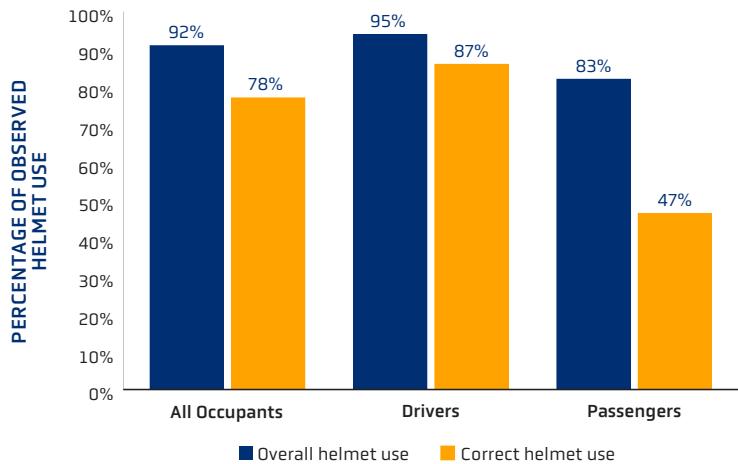
Correct helmet use was less frequent among women and children
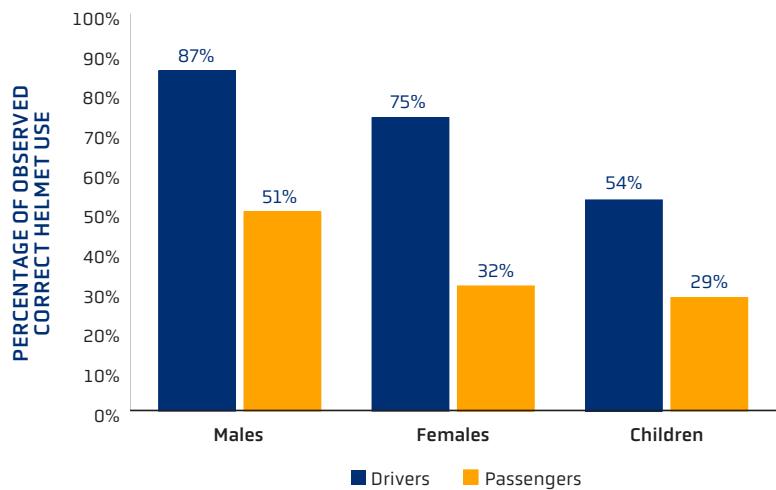
Bar chart — PERCENTAGE OF OBSERVED CORRECT HELMET USE:
- Males: Drivers 87%, Passengers 51%
- Females: Drivers 75%, Passengers 32%
- Children: Drivers 54%, Passengers 29%

Legend: ■ Drivers ■ Passengers

Recommendations

Dhaka Metropolitan Police:

- Enhance enforcement of correct helmet use among all occupants with a focus on passengers, women, children, and occupants of commercial two-wheelers.

- Increase enforcement operations on weekends and on local and collector roads.

- Implement sustained, visible, and widespread enforcement operations across the city for maximal impact.

Dhaka North City Corporation and Bangladesh Road Transport Authority:

- Implement mass media campaigns that are coordinated with enhanced enforcement to increase correct helmet use. Messages ought to focus on correct helmet use at all times, especially by women and children.

Seat–Belt and Child Restraint Use in Dhaka North

Seat–belts and child restraints play a significant role in reducing the severity of injuries in the event of a crash; they reduce mortality by 50% in crashes in which motorists, passengers (including rear–seat passengers), and children would otherwise die. Children in front seats have a 40% higher road traffic injury risk than children in rear seats.

Only 57% of drivers used a seat-belt.

Seat-belt use among passengers awas low (5%).

**Child restraint use was non-existent** at 0%.

Seat-belt use was lower among drivers of buses (4%) and trucks (28%) compared with drivers of light vehicles.

Key Findings on Seat-Belt and Child Restraint Use in Dhaka North

Seat-belt use was low, especially among passengers
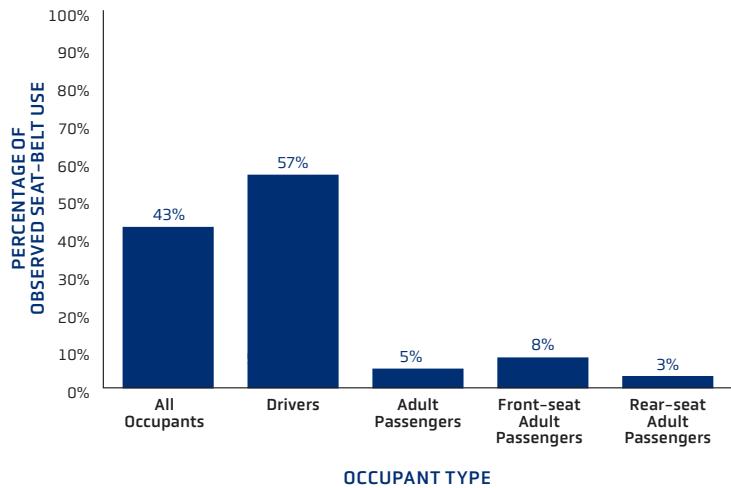
Seat-belt use was lowest among drivers of heavy vehicles (buses and trucks)
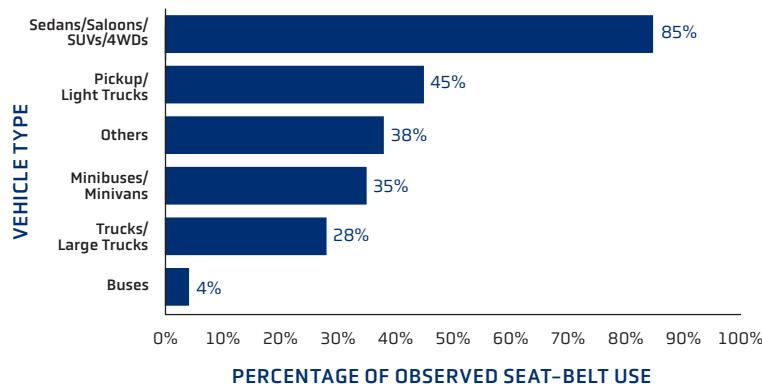
Recommendations

Dhaka Metropolitan Police:

- Enhance enforcement of seat-belt use among all vehicle occupants, particularly passengers and occupants of heavy and commercial vehicles.

- Implement sustained, visible, and widespread enforcement operations across the city for maximal impact.

Dhaka North City Corporation and Bangladesh Road Transport Authority:

- Advocate for a national child restraint law in line with global best practices.

- Implement mass media campaigns that highlight the importance of seat-belt and child restraint use in addition to other harm reduction measures. Messages ought to focus on seat-belt use by all occupants at all times, and especially occupants of heavy and commercial vehicles.

- Coordinate mass media campaigns with enhanced enforcement efforts.

Police enforcement ensuring road safety at Progoti Sarani, Dhaka North, Bangladesh.
Photo: DNCC

METHODS

Since 2021 the Johns Hopkins International Injury Research Unit has partnered with the Centre for injury Prevention and Research, Bangladesh (CIPRB), to conduct roadside observations. The methods for these findings were developed by the Johns Hopkins International Injury Research Unit and implemented in collaboration with the CIPRB. This report provides results from observational surveys that represent population-level (citywide) prevalence of important road safety risk factors— speed, helmet use, and seat-belt and child restraint use—at baseline, followed by additional observations of speed to show changes over time. For helmet use, there were 61,984 observations at baseline; for seat-belt and child restraint use, 54,676 observations at baseline, and for speed there were approximately 240,212 observations, including baseline and two additional rounds.

During the baseline in Dhaka North, 15 observation sites were randomly selected, conditional on the safety of observers. A standardized protocol was used with vehicles selected for observation in a systematic quasi-random fixed sequence. Observations were performed between 7:30 a.m. and 7:00 p.m. on both weekdays and weekend days. For the November 2022 round, five additional sites and two additional timeslots (early morning from 4:30 a.m. to 6:00 am and late night from 9:30 p.m. to 11:00 p.m.) were included as requested by the local authorities. The methods were designed to estimate citywide prevalence and cannot provide insights into interventions conducted in specific locations in the city. The data management team at Johns Hopkins International Injury Research Unit reviewed and cleaned the data to produce the analyses available in this report.